

IN THE CLAIMS

1. (original): A process for making an electronic device which comprises applying a non-aqueous solder mask ink which is substantially free from organic solvent to a dielectric substrate containing electrically conductive metal circuitry, exposing the solder mask ink to actinic radiation and/or particle beam radiation optionally followed by thermal treatment, whereby the solder mask ink is applied to selected areas of the substrate under the control of a computer by ink jet printing and wherein the solder mask ink comprises the components:

- A) 30 – 90 parts acrylate functional monomers which are mono or higher acrylate functional monomers comprising from 5 – 95% by weight of one or more monofunctional monomers;
- B) 0.1 – 30 parts metal adhesion promoting organic compound;
- C) 0 – 30 parts initiator;
- D) 0 – 10 parts polymer and/or prepolymer;
- E) 0 – 5 parts colorant;
- F) 0 – 5 parts surfactant; and

wherein all parts are by weight.

2. (original): A process as claimed in claim 1 wherein the viscosity of the solder mask ink is from 8 to 20 cPs (mPa.s) at 40°C.

3. (currently amended): A process as claimed in ~~either claim 1 or claim 2~~ wherein the weight average molecular weight of the acrylate functional monomer is not greater than 2,000.

4. (currently amended): A process as claimed in ~~any one of claims 1 to 3~~ claim 1 wherein the acrylate functional monomer is isobornyl acrylate, tripropylene glycol diacrylate or trimethylolpropane ethoxylate triacrylate.

5. (currently amended): A process as claimed in ~~any one of claims 1 to 4~~ claim 1 wherein the amount of mono-functional acrylate monomer is 70-95% by weight of the acrylate-functional monomer (component A)).

6. (currently amended): A process as claimed in ~~any one of claims 1 to 5~~ claim 1 wherein the adhesion promoter is an acrylate functional monomer.

7. (currently amended): A process as claimed in ~~any one of claims 1 to 6~~ claim 1 wherein the adhesion promoter contains a metal chelant group which is a carboxylic acid.

8. (original): A process as claimed in claim 7 wherein the adhesion promoter is (meth)acrylic acid.

9. (currently amended): A process as claimed in ~~any one of claims 1 to 8~~ claim 1 wherein the adhesion promoter is a polypropylene glycol tetra acrylate containing (meth)acrylic acid.

10. (original): A process as claimed in claim 9 wherein the adhesion promoter has an acid value of not greater than 120 mg KOH/g.

11. (currently amended): A process as claimed in ~~any one of claims 1 to 10~~ wherein the amount of adhesion promoter is not greater than 15 parts by weight.

Claims 12 – 14 (cancelled)

15. (currently amended): A process as claimed in ~~any one of claims 1 to 14~~ claim 1 wherein the electronic device is a printed circuit board.

16. (currently amended): A process as claimed in ~~any one of claims 1 to 15~~ claim 1 wherein the solder mask ink has an acid value of not greater than 30 mg KOH/g.

Claim 17 (cancelled)

18. (currently amended): A process as claimed in ~~any one of claims 1 to 17~~ claim 1 wherein the amount of initiator is not less than 5 parts.

Claims 19 – 23 (cancelled)

24. (currently amended): A process as claimed in ~~any one of claims 1 to 23~~ claim 1 wherein the number of parts of components A) + B) + C) + D) + E) + F) = 100.

25. (original): A non-aqueous solder mask ink which is substantially free from organic solvents which comprises the components:

- A) 30 to 90 parts acrylate functional monomers which are mono or higher acrylate functional monomers comprising from 5 – 95% by weight of one or more monofunctional monomers ;
- B) 0.1 to 30 parts metal adhesion promoting compound;
- C) 5 to 30 parts initiator;
- D) 0 to 10 parts polymer and/or prepolymer;
- E) 0 to 5 parts colorant;
- F) 0 to 5 parts surfactant; and

wherein the ink has a viscosity of not greater than 30 cPs (mPa.s) at 40°C and all parts are by weight.

26. (original): A non-aqueous solder mask ink which is substantially free from organic solvents which comprises the components:

- A) 30 to 90 parts acrylate functional monomers which are mono or higher acrylate functional monomers comprising from 5 – 95% by weight of one or more monofunctional monomers;
- B) 0.1 to 30 parts metal adhesion promoting organic compound containing one or more carboxylic acid groups and having an acid value of not greater than 120 mg KOH/gm;
- C) 5 to 30 parts initiator;
- D) 0 to 10 parts polymer and/or prepolymer;
- E) 0 to 5 parts colorant; and
- F) 0 to 5 parts surfactant;

wherein the ink has a viscosity of not greater than 30 cPs (mPa.s) at 40°C and all parts are by weight.

27. (original): A non-aqueous solder mask ink which is substantially free from organic solvents which comprises the components:

- A) 30 to 90 parts acrylate functional monomers which are mono or higher acrylate functional monomers comprising 5 – 95% by weight of one or more mono-functional monomers;

- B) 0.1 to 30 parts metal adhesion promoting organic compound containing one or more carboxylic acid groups;
- C) 5 to 30 parts initiator;
- D) 0 to 10 parts polymer and/or prepolymer;
- E) 0 to 5 parts colorant;
- F) 0 to 5 parts surfactant; and

wherein the acid value of the total solder mask ink is not greater than 30mg KOH/g and all parts are by weight.

28. (currently amended): An ink as claimed in ~~any one of claims 21 to 25~~ claims 25, 26 or 27 wherein the number of parts of components A) + B) + C) + D) + E) + F) = 100.

29. (currently amended): A cartridge for an ink jet printer comprising a chamber and an ink wherein the ink is present in the chamber and the ink is a solder mask ink as claimed in ~~any one of claims 25 to 28~~ claim 27.

30. (currently amended): An electronic device obtained by a process according to ~~any one of claims 1 to 24~~ claim 1.